California Environmental Protection Agency

Air Resources Board

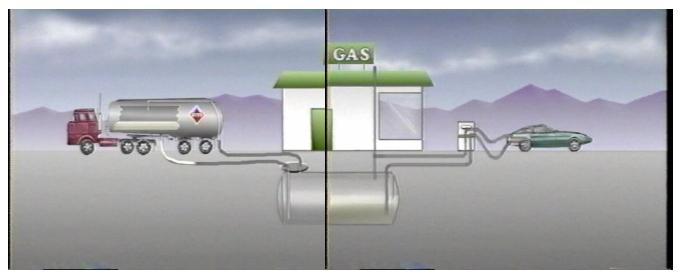
HEARING NOTICE AND STAFF REPORT

INITIAL STATEMENT OF REASONS FOR PROPOSED RULEMAKING, PUBLIC HEARING TO CONSIDER THE ADOPTION AND AMENDMENT OF VAPOR RECOVERY SYSTEM CERTIFICATION AND TEST PROCEDURES

October 25, 2001

Phase I (distribution)

Phase II (consumer)



California Environmental Protection Agency

Air Resources Board

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STAFF REPORT:

INITIAL STATEMENT OF REASONS FOR PROPOSED RULE MAKING, PUBLIC HEARING TO CONSIDER THE ADOPTION AND AMENDMENT OF VAPOR RECOVERY SYSTEM CERTIFICATION AND TEST PROCEDURES

Prepared by:

Lou Dinkler Joe Fischer Oscar Lopez Paul Marzilli

Vapor Recovery Certification Section Engineering and Certification Branch Monitoring and Laboratory Division

Reviewed by:

William V. Loscutoff, Chief, Monitoring and Laboratory Division George Lew, Chief, Engineering and Certification Branch Laura McKinney, Manager, Vapor Recovery Certification Section Diane Moritz Johnston, Senior Staff Counsel

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Bay Area Air Quality Management District Glenn County Air Pollution Control District Monterey Bay Unified Air Pollution Control District San Diego County Air Pollution Control District South Coast Air Quality Management District Chevron U. S. A. Products Company

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I. INTRODUCTION AND RECOMMENDATIONS

A. Introduction

State laws authorizes the California Air Resources Board (Board or CARB) to adopt procedures for certifying systems to control gasoline vapor emissions during gasoline marketing operations. In addition CARB is required to adopt test methods to determine compliance with CARB and district non-vehicular emissions standards. In 1975, the Board adopted the first vapor recovery certification and test procedures. The Board on March 23, 2000 approved the enhanced vapor recovery (EVR) regulations to correct problems found with in-use vapor recovery systems and to obtain additional emission reductions.

The EVR regulations require vapor recovery manufacturers to develop new equipment designs and systems to meet the new standards. During the certification process of these new designs and systems, staff found that some of the adopted test procedures are not applicable to new equipment designs and identified the need for new performance specifications and test procedures to evaluate these new systems. To make these performance specifications and test procedures apply to future certifications, staff proposes that the Board adopt them into the EVR regulations.

To improve the EVR regulations staff is proposing to modify four existing procedures, including the definitions, and to add three new test procedures. The following is a short summary of proposed modifications of existing certification or test procedures (designated as (amended)) and new procedures (designated as (new)):

1. D-200 Definition for Vapor Recovery Procedures (amended)

Proposed amendments include defining the term, static torque at Phase I adaptors, and clarifying the definitions for vapor guard (mini-boot), summer fuel, and winter fuel.

2. CP-201 Certification Procedures for Vapor Recovery Systems at Gasoline Dispensing Facilities (amended)

Proposed amendments include establishing a static torque performance specification of 108 pound-inch (9 pound-foot) for Phase I vapor and product adaptors as determined by proposed TP-201.1B Static Torque of Rotatable Phase I Adaptors. Staff is proposing cam and groove specifications for vapor and product adaptors. Other changes include specifying proposed TP-201.1C (Pressure Integrity of Drop Tube/Drain Valve Assembly) and TP-201.1D (Pressure Integrity of Drop Tube Overfill Protection Devices) to determine leak rates of the spill containment box and drop tube with overfill protection devices when the drop tube is below the spill containment box. Staff is proposing a methodology for calculating the average daily pressure of the underground storage tank. The exponent in

Equation 3-1 has been corrected to be consistent with other provisions in CP-201.

3. TP-201.1B Static Torque of Rotatable Phase I Adaptors (new)

A new certification and compliance test procedure is proposed to verify compliance with maximum 108-pound-inch static torque standard, and the 360 degree rotation requirement for product and vapor adaptors used at gasoline dispensing facilities.

4. TP-201.1C Pressure Integrity of Drop Tube/Drain Valve Assembly (new)

Staff proposes a new certification and compliance test procedure for measuring the leak rate of drain valves to determine compliance with the certification performance specification of 0.17 cubic feet per hour at a pressure of two inches water column. This procedure would apply in instances where the drop tube is located below the drain valve.

5. TP-201.1D Pressure Integrity of Drop Tube Overfill Protection Devices (amended)

Staff is proposing to amend an existing certification and compliance test procedure which would allow for measuring the leak rate of the drain valve in addition to the leak rate of the drop tube overfill protection device.

In addition staff proposes a new test procedure and a modification of an existing procedures at the request of the California Air Pollution Control Officer Association (CAPCOA). CAPCOA requested that the applicability of TP-201.4 (Dynamic Back Pressure) be expanded to include other types of vapor recovery system. Staff was requested by CAPCOA to develop a new shorter and abbreviated compliance procedure for determining liquid removal for balance systems. The following is a brief description of the proposed two test procedures.

1. TP-201.4 Dynamic Back Pressure (amended)

The proposed amendments modify an existing certification and compliance test procedure by adding four methodologies for configurations that are subject to the dynamic pressure standard but were not addressed in the current procedure.

2. TP-201.6C Compliance Determination of Liquid Removal Rate (new)

Staff proposes a new compliance test procedure that provides two options for determining the liquid removal rate for liquid removal devices used on balance vapor recovery systems.

B. Recommendations

Staff recommends that the Board adopt the following:

- 1. Amendments to the California Code of Regulations to incorporate the proposed certification and test procedures by reference (as outlined in Appendix 1)
- 2. Amendments to the incorporated vapor recovery system certification and test procedures (Appendix 2)

II. BACKGROUND

A. California's Vapor Recovery Program

In California, the implementation of the vapor recovery program is shared between CARB and the districts. CARB is responsible for certifying the vapor recovery systems that will be installed in gasoline dispensing facilities (service stations). This ensures that all vapor recovery systems are certified to one set of standards and requirements statewide. State law and district regulations require the installation of only those systems certified by CARB. Districts are responsible for inspecting and testing the vapor recovery systems once installed to ensure that the systems are operating as certified. Districts must use only those test procedures specified or approved by CARB for compliance determination.

Vapor recovery systems have been used in California to control reactive organic gases (ROG) emissions for over twenty years. The feasibility of the first vapor recovery systems was studied at the district level, particularly in San Diego and the Bay Area in the early 1970's. Enacted in 1975, state law requires CARB to "adopt procedures for determining the compliance of any system designed for the control of gasoline vapor emissions during gasoline marketing operations, with performance standards which are reasonable and necessary to achieve or maintain any applicable ambient air quality standard" (Health and Safety Code 41954 (a)).

In the late 1990s, CARB and district staffs conducted joint statewide inspections of inuse vapor recovery systems. These inspections revealed that many installed vapor recovery systems were operating less efficiently than as certified. As a result, the staff proposed and the Board approved the enhanced vapor recovery (EVR) regulations on March 23, 2000. The goal of EVR is to seek additional emissions reductions by increasing the stringency of the emission standards, improve the certification process to increase the performance and reliability of vapor recovery equipment, and reevaluate currently certified systems. The new EVR regulations will apply to new gasoline dispensing facilities or major modification of existing facilities on or after the operative date of the regulations. Existing installations will have four years to comply as provided by state law. To avoid major disruption of the gasoline marketing industry, specific EVR performance standards will be phased-in over the next several years.

B. Air Quality Benefits for Controlling ROG Emissions from Gasoline Dispensing Facilities

One of the earliest and most successful control measures for ROG is vapor recovery for gasoline marketing operations. Even with current controls, petroleum product transfers are responsible for significant emissions. According to a 1995 emission inventory, petroleum marketing operations (which include emissions from service stations and cargo tank loading facilities) emit 77 tons per day of ROG statewide. This accounts for about 10% of the total ROG emissions of 740 tons per day from all stationary sources combined.

Created by the photochemical reaction of ROG and oxides of nitrogen (NO_X), ground level ozone causes harmful respiratory effects including lung damage, chest pain, coughing, and shortness of breath. Ozone is particularly harmful to children, the elderly, athletes, and people with asthma. Adverse environmental effects of ozone include reduced crop yields and damage to exteriors of buildings.

Throughout the past 30 years, significant strides have been made in improving California's air quality. Unfortunately, many regions throughout California continue to exceed health-based state and federal air quality standards. Air quality standards are based upon key criteria pollutants including ozone, oxides of nitrogen, particulate matter, carbon monoxide, and sulfur dioxide. Areas of the state exceeding the state and federal ozone standards include the South Coast Air Basin, San Diego County, San Joaquin Valley, the Sacramento region, and Ventura County. As the new, more stringent, federal ozone standard is implemented, more areas of the state are likely to be categorized as non-attainment for ground level ozone.

C. Description of Vapor Recovery Systems

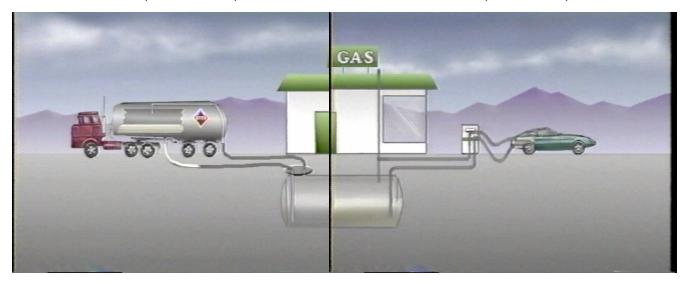
1. Phase I Vapor Recovery System

Each gasoline transfer will lead to displaced vapors. Vapor recovery systems are used throughout the gasoline marketing chain to contain vapors that would otherwise escape into the atmosphere. The first transfer occurs when a cargo tank is filled with product at a loading rack of a refinery terminal or a bulk plant. While the cargo tank is filled, gasoline vapor present in the cargo truck tank is displaced into a processing unit at the terminal or bulk plant. The recovered vapors are normally condensed back to liquid fuel. The second transfer involves the transfer of gasoline from the cargo truck tank to the stationary storage tanks of gasoline dispensing facilities (service stations). Recovery of vapor during the second transfer is called Phase I vapor recovery (Figure 1). As the storage tank of the gasoline dispensing facility is filled, vapors are displaced into the cargo tank through hoses that connect the storage tank to the delivery cargo tank.

Phase I and Phase II Vapor Recovery Systems at Service Stations

Phase I (distribution)

Phase II (consumer)



2. Phase II Vapor Recovery System

Phase II vapor recovery systems control emissions resulting from gasoline transfer from the gasoline dispensing facility (service station) to vehicles (Figure 1). This is the type of vapor recovery equipment that many of us operate routinely when fueling our cars. The two main types of Phase II vapor recovery systems are balance and assist.

Balance systems can be identified by the long bellows or boot located around the spout of the nozzle, and the donut-like faceplate on the end of the bellows. A tight seal between the faceplate and the vehicle fillpipe is critical to ensure that the vapor displaced while filling the vehicle tank is routed back through the nozzle and hose to the underground tank vapor space.

Assist systems, by contrast, are often identified by the appearance of "bootless" nozzles. During vehicle refueling, vapors are collected by a dispenser actuated vacuum pump. In some cases, vapors are collected through a series of holes in the nozzle spout. Some assist systems also have processors to manage underground vapor space pressure. Two currently certified systems operate with thermal oxidizers on or near the vent pipe in order to reduce emissions.

D. Legal Authorities

Section 41954 of the Health and Safety Code (Appendix 3 contains a copy of section 41954) requires CARB to adopt procedures and performance standards for controlling gasoline emissions from gasoline marketing operations, including transfer and storage

operations to achieve and maintain ambient air quality standards. This section also authorizes CARB, in cooperation with districts, to certify vapor recovery systems that meets the performance standards. Section 39607(d) of the Health and Safety Code requires CARB to adopt test procedures to determine compliance with CARB and districts non-vehicular standards. State law (section 41954) requires districts to use CARB test procedures for determining compliance with performance standards or specifications established by CARB.

To comply with state law, the Board adopted certification and test procedures found in title 17, Code of Regulations, sections 94110 to 94015 and 94101 to 94163. These regulations reference procedures for certifying vapor recovery systems and test procedures for verifying compliance with performance standards and specifications.

E. Comparable Federal Regulations

There are no comparable federal regulations that certify gasoline vapor recovery systems for service stations; however, changes to CARB vapor recovery certification regulations may have a national impact. CARB certification is required by most other states that mandate the installation of vapor recovery systems in gasoline dispensing facilities.

F. Distinction Between Certification and Compliance Test Procedures

CARB test procedures are used to accomplish two goals. First test procedures are used during the certification process to verify that performance standards or specifications are met. Second, districts use test procedures to determine compliance with performance standards or specifications established by the system certification. Certification test procedures are more rigorous and comprehensive because they are used to assess the system under various operating conditions. To promote statewide uniformity, districts are required to use test procedures specified by CARB for determining compliance with in-use vapor recovery systems. In some cases both certification and compliance test procedures are identical. In other instances the compliance test procedures are abbreviated and simplified versions of the certification test procedures.

III. RULE DEVELOPMENT PROCESS AND PUBLIC OUTREACH EFFORTS

A. Public Workshop

The proposed vapor recovery test methods were made available for public review via the Internet and hardcopy on June 8, 2001. Staff held a public workshop on June 20, 2001, in Sacramento. Workshop notices were sent to an extensive list of districts, equipment manufactures, associations of vapor recovery system users, oil companies, gasoline dispensing facility operators, vapor recovery equipment distributors, and vapor recovery testing organizations. Approximately 60 individuals attended the workshop. Several modifications have been made to the proposed test procedures based on written comments received during the public outreach process. The modified procedures were posted on the Internet on July 27, 2001, and further comments were invited. Additional changes were made based on comments received.

B. Meetings with Districts and Other Agencies

Staff communicated frequently with district staff while preparing these proposals, in part through regular attendance at the CAPCOA Vapor Recovery Technical Committee meetings. A copy of the staff proposal was sent to the State Fire Marshal Office and Division of Occupational Safety and Health of the Department of Industrial Relations for comments.

C. Information Posted on the CARB Vapor Recovery Website

Once staff identified the need for new vapor recovery test procedures and revised certification performance specifications, CARB's vapor recovery web page was regularly updated to provide information and to solicit comments throughout the process of drafting the proposed procedures. For example, valuable feedback was obtained from various interested parties during the development of the proposed cam and groove specifications and static torque standard.

IV. REASONS FOR AND SUMMARY OF PROPOSED AMENDMENTS OF CERTIFICATION AND TEST PROCEDURES

The EVR regulations establish performance standards and test procedures for certifying vapor recovery equipment. Performance standards and specifications used during the certification process verify that in-use vapor recovery systems will operate correctly. As manufacturers strive to meet the new EVR requirements, new equipment designs or systems are submitted for certification. Staff in reviewing these new designs or systems has found that existing performance specifications and test procedures were not adequate to evaluate some new designs or systems. As a result staff worked cooperatively with applicants to clarify performance specifications and to develop corresponding test procedures. Since the March 23, 2000, approval of the EVR regulations by the Board,

staff has developed additional performance specifications and test procedures for evaluating systems designed to comply with the Phase I EVR performance specifications. By continuing to update the vapor recovery certification and test procedures, CARB improves vapor recovery system certification.

A. Proposed Phase I Vapor Recovery Certification and Test Procedures

1. CP-201 Certification Procedure for Vapor Recovery Systems at Gasoline Dispensing Facilities.

CP-201 prescribes requirements for certification of vapor recovery systems for gasoline dispensing facility (service station). These requirements include performance standards and specifications, test procedure requirements and testing requirements. During the certification of EVR phase I systems, staff identified the need for new performance specifications for static torque and cam and groove dimensions for vapor and product adaptors used during delivery of gasoline to gasoline dispensing facilities.

Staff is proposing to amend CP-201 by specifying a static torque standard of 108 pound-inch (9 pound-foot) for rotatable vapor and product adaptors. This standard is necessary to ensure that adaptors are not tightened or loosen during fuel delivery to the gasoline dispensing facilities. The 108 pound-inch specification is based on the torque exerted on the adaptor with a delivery elbow and hose attached as the cargo tank driver "walks" the hose to drain fuel remaining in the hose after cargo tank shut-off is activated.

Staff found that no industry standards existed for cam and groove for the product adaptor. An industry standard was established for the vapor adaptor in the 1970s. Having an industry standards for both the vapor and product adators is critical to ensure that all adaptors and delivery elbows are compatible. In developing the cam and groove specifications, staff asked for suggestions and comments from adaptor and elbow manufacturers and other stakeholders. Based on comments received, staff developed proposed cam and groove specifications for the vapor and product adaptors, which again were submitted to the stakeholders for comments. There was general consensus among stakeholders of the need for uniform specifications and for the staff's proposed cam and groove specifications.

Other changes include specifying a procedure for measuring the leak rate of the drain valve of the spill containment box. With the placement of the drop tube below the spill containment box, the adopted test procedure is no longer applicable. The leak rate is to be determined by either TP-201.1C or TP-201.1D depending on the configuration. TP-201.1D would be used where there is a drop tube with an overfill protection device.

CP-201 specifies that the daily average positive pressure shall be used for

calculating the rolling 30-day average underground tank pressure. However, no methodology was indicated for determining the daily average positive pressure. The amendment provides a methodology and an example for determining the daily average positive pressure.

The current liquid retention test procedure (TP-201.2E Gasoline Liquid Retention in Nozzles and Hoses) specifies that each nozzle must be tested 10 times for certification testing. Staff is proposing to clarify CP-201 by specifying that four of the 10 refuelings must be fill-ups. Topoffs would be excluded.

Section 3.2.2 contains equations for calculating final allowable pressures for leak decay testing for Phase I systems. The exponent in Equation 3-1 has been corrected to reflect the more stringent standard required for assist Phase II vapor recovery systems (see section 4.2). This change will ensure that Phase I systems are compatible with both balance and assist Phase II vapor recovery systems.

2. D-200 Definition for Vapor Recovery Procedures

With the addition of a proposed static torque performance specification, staff is proposing to define this term in D-200. Other modifications include non-substantive clarification of the terms for vapor guard (mini-boot), summer fuel, and winter fuel.

3. TP-201.1B Static Torque of Rotatable Phase I Adaptors

Since proposed CP-201 establishes a static torque specification for vapor and product adaptors, TP-201.1B is a proposed certification and compliance test procedure to measure the static torque and 360 degree rotation of product and vapor adaptors used during cargo tank delivery. The 360 degree rotation is already a specification in the current CP-201. Determining the torque and rotation is necessary for proper operation of the adaptors.

A torque wrench and torque test tool are sufficient to perform this test outlined in proposed new test procedure, TP-201.1B. A tester installs the torque test tool on the adaptor and gently applies pressure to the torque wrench. Once the adaptor begins to rotate, a torque measurement is taken. A total of three measurements are taken and then averaged for a final result. The rotation of the adaptor through at least 360 degrees is then verified.

4. Method TP-201.1C Pressure Integrity of Drop Tube/Drain Valve Assembly

Over the past year, staff has evaluated new EVR systems used for the collection of vapor during Phase I deliveries. These new Phase I systems include placement of the drain valve so that liquid drains directly into the drop tube as opposed to earlier systems where the valve drained liquid into the storage tank ullage (the vapor space above the fuel inside the tank). The new design is superior to older designs due to

the fact that leaky drain valves will no longer allow vapor to vent from the storage tank to atmosphere. Since the drain valve is now isolated from the storage tank ullage, existing leak decay test procedures are no longer applicable for checking leak integrity of the drain valves.

Proposed TP-201.1C is a new certification and compliance test procedure that would allow the pressurization of the drop tube. This would determine if the drain valve complies with the leak rate performance specification of 0.17 cubic feet per hour at a pressure of two inches water column as set forth in the Certification Procedure CP-201.

5. Method TP-201.1D Pressure Integrity of Drop Tube Overfill Protection Devices

TP-201.1D (originally incorrectly designated as TP-201.2O) is used to determined the leak rate of drop tube overfill protection device. For the new EVR design where the liquid is drained into the drop tube, the current version of the test procedure cannot be used to measure separately the leak rate of the drop tube overfill protection device and drain valve. CP-201 specifies for each a leak rate of 0.17 cubic feet per hour at a pressure of two inches water column. The proposed TP-201.1D will allow separate measurement of the leak rate of the drain valve and drop tube overfill protection device by isolating the drain valve and the overfill protection device by inserting a bladder or seal into the top of the drop tube.

B. Proposed Phase II Vapor Recovery Certification and Test Procedures

The California Air Pollution Control Officer Association (CAPCOA) requested that the Board update two test procedures that are used by districts for compliance determination. The first test procedure, TP-201.4 Dynamic Back Pressure, determines whether there are restrictions in vapor recovery piping systems. The current TP-201.4 is limited to balance systems and CAPCOA wanted its applicability expanded to vacuum assist systems. CAPCOA requested a shorter and simplified version of existing TP-201.6 (Determination of Liquid Removal of Phase II Vapor Recovery Systems of Dispensing Facilities) for compliance testing. TP-201.6 is used to determine if liquid removal devices on balance systems are capable of a removal rate of five (5) milliliters per gallon.

1. Method TP-201.4 Dynamic Back Pressure

TP-201.4 was last amended in 2000. This test procedures provides methodologies for determining the resistance of vapor flow (back pressure) through dispensing equipment by simulating flow through the vapor return path with the use of nitrogen. To be certified each system must meet the back pressure limits outlined in "CP-201 Certification Procedure for Vapor Recovery Systems at Gasoline Dispensing Facilities." TP-201.4 is used as both as a compliance and certification test procedure to determine the back pressure caused by resistance to flow, and is

used to verify that in-use vapor recovery systems' performance is similar to the certified system. The proposed amendments will expand the applicability to vacuum assist systems by adding four test methodologies. The methodologies differ to accommodate differences in vapor recovery system designs. Other changes are proposed to clarify the test procedure. The principle of the test measurement has not changed.

2. Method TP-201.6C Compliance Determination of Liquid Removal Rate

TP-201.6C, "Compliance Determination of Liquid Removal Rate," is a new compliance test procedure used to quantify the removal rate of liquid from the vapor passage of a balance system equipped with a liquid removal device. The proposed procedure was created in response to district concerns regarding the existing liquid removal test procedure (TP-201.6) which is used for both certification and compliance purposes. The primary objective of the proposed procedure is to provide a less time consuming and resource intensive liquid removal test method. Unlike the existing procedure, the proposed procedure allows testing to be conducted while other refueling activity occurs at the service station. The number of test runs required has been reduced, resulting in significant time savings. To ensure repeatability and consistency, the nozzle/hose orientation while dispensing fuel has been specified. In addition, the proposed compliance procedure reduces the amount of fuel dispensed, the handling of gasoline, and test related emissions.

The proposed test procedure provides two options to determine the compliance of liquid removal devices. Under option 1 (short version), liquid in the vapor path of a coaxial hose is drained and measured. If the volume of liquid drained exceeds 25 ml, a liquid removal test is conducted. For those hoses with less than 25 ml drained, no further testing is required. Under option 2 (long version), all hoses are evaluated regardless of the volume of liquid drained. Option 2 includes a prewetting and wall adhesion step. Both options test the liquid removal device by introducing gasoline into the vapor path of the coaxial hose through the nozzle bellows. After 7.5 gallons of gasoline is dispensed, the amount of gasoline remaining in the hose is measured and the liquid removal rate is determined. Each district shall specify which testing option is to be used by GDFs within the district.

V. OUTSTANDING ISSUES

Staff received no comments on the following certification and test procedures:

- 1. TP-201.1B Pressure Integrity of Drop Tube/Drain Valve Assembly
- 2. TP-201.1C Static Torque of Rotatable Phase I Adaptors
- 3. TP-201.1D Pressure Integrity of Drop Tube Overfill Protection Devices
- 4. D-200 Definitions For Vapor Recovery Procedures

Staff received comments on CP-201, TP-201.4, and TP-201.6C and has addressed most of them. The following explains why staff did not accept certain comments, resulting in outstanding issues.

A. Proposed CP-201

Staff received comments on CP-201 seeking to revise the current performance standards and specifications for certifying vapor recovery systems. Changes suggested by these comments were not incorporated or considered because they are beyond the scope of the staff's proposal.

B. Proposed TP-201.4

One district questioned the validity of the results of conducting TP-201.4 on a station without first verifying tank tightness with a State Water Resources Control Board (SWRCB) test procedure and a CARB leak decay test, TP-201.3. The TP-201.4 test procedure is a stand alone test procedure to determine the dynamic backpressure performance of the vapor recovery piping back to the underground storage tanks. By not specifying an order for testing, TP-201.4 may be conducted by districts as a random and unannounced test of gasoline dispensing facilities. Each district may, in cooperation with local authority responsible for permitting underground storage tanks, determine the type, order and frequency of testing of gasoline dispensing facilities. Without the authority for certification of underground storage tanks, CARB does not have the statutory authority to require a SWRCB test of the tanks. TP-201.3 is leak tightness test and the results of such a test would have no bearing on the TP-201.4 results, because the proposed TP-201.4 testing requires the underground storage tanks to be vented to atmosphere whenever nitrogen flow is being introduced to the vapor recovery piping. Venting is necessary to eliminate test biases.

C. Proposed TP-201.6C

During the public comment period one district requested that a constant specified by CARB be used to estimate wall adhesion for test option 2 under TP-201.6C. Under the current test procedure, TP-201.6, wall adhesion is determined by pouring 150 ml of gasoline into the hose, then immediately draining the hose, and calculating the difference. Based on wall adhesion data collected by staff, it was determined that a constant was not supported by the data. According to tests by CARB, wall adhesion values can vary anywhere between 8 ml and 20 ml. As a result, the proposal requires wall adhesion to be determined by testing.

VI. ECONOMIC AND ENVIRONMENTAL IMPACTS

A. Economic Impact

Overall, staff does not expect the proposed modifications to impose an unreasonable cost burden on gasoline dispensing equipment manufacturers, vapor recovery testers, or gasoline dispensing facilities. In one instance, a modification to a single procedure would shorten the time required to complete testing which would reduce test time and hourly labor charges. Two new procedures will slightly offset the savings. One minor component to consider is the cost for equipment required to complete testing. Each of these components involved in the economic impact to facilities and testers will be addressed in this section in a detailed manner. Staff believes that the test equipment costs would be minor in nature and the time savings required to complete vapor recovery testing will offset other costs.

1. Potential Impacts on Vapor Recovery Test Equipment

The proposed amendments could, in some cases, impose additional equipment costs on testers of vapor recovery systems. With the exception of the torque wrench and torque test tool, most testers already have test equipment that is applicable to the proposed test procedures. Additional equipment costs would occur only in the case of a tester without all of the necessary equipment to properly perform the testing procedures. Table VI-1 lists the one-time cost for a tester who does not have the required test equipment and would have to purchase each item.

The analysis shows that the proposed procedures may require a small, one-time expenditure for the testing contractor. This is not expected to increase the average testing costs. The increase in equipment cost will be small when spread over the approximately 11,500 gasoline dispensing facilities in the state. Indirect costs to GDFs would be incurred if the testing/maintenance contractors and organizations increase service costs. If the service costs were passed on the GDFs by the testing/maintenance contractors and organizations, the costs would be less than \$1.00 as a one time cost increase assuming that the increased equipment costs were not amortized over the life of the equipment (\$10,000 initial cost divided by 11,250 GDFs = \$0.88 per GDF). If districts conduct the proposed procedures and incur costs for purchasing the testing equipment, testing costs to GDFs as the result of any permit fee increase would be \$1.56 as a one time cost increase assuming that the districts do not amortize the fee increase over the life of the equipment (\$17,500 fee increase divided by 11,250 GDFs = \$1.56 per GDF).

Figure VI-1
Cost of Equipment/Tools Needed by
Proposed Test Procedures

Proposed Test Procedure	Test Equipment/Tools Required to Conduct Testing	Estimated Cost of Equipment/Tool
TP-201.1B	Torque Wrench	\$250

	Torque Test Tool	\$50	
TP-201.1C	Dust Cap	\$25	
17-201.10	Pressure Fittings	\$75	
TP-201.1D	No additional equipment		
TP-201.4	Pressure Fittings, Caps, etc. \$125		
TP-201.6C	Plastic Funnels	\$15	
1P-201.0C	Graduated Cylinders	\$25	
	Potential Equipment Costs \$565		

2. Potential Impacts on Hourly Labor Requirements

Gasoline dispensing facilities are the main focus of the proposed amendments. These facilities are required to test vapor recovery equipment on an annual and sometimes more frequent basis as determined by district rules, policies, or guidelines. The proposal is expected to result in an overall net saving to the gasoline dispensing facilities due to reduction in the hourly labor costs of test personnel and districts as well as the ability for stations to remain open and generate revenue during testing.

As shown by Figure VI-2, there are some additional hourly requirements created by the proposed procedures as well as reductions resulting from the streamlining of existing procedures detailed in the next section. TP-201.1B and TP-201.C take less than one half hour each per facility. This time may vary slightly based on tester experience or difficulties encountered, but significant deviations in the time required to conduct the tests are not anticipated.

Figure VI-2
Time to Conduct Testing

Test Procedure	Current Procedure Hourly Requirements	Proposed Procedure Hourly Requirements	Difference
TP-201.1B	N/A	.50	+.50
TP-201.1C	N/A	.50	+.50
TP-201.1D	.50	1	+.50
TP-201.4	2	2	0
TP-201.6C	4	1	-3
		Net Decrease	1.50 hours

The largest savings will come from the adoption of TP-201.6C. The time to complete proposed TP-201.6C testing will substantially be less than the existing TP-201.6. TP-201.6 is a certification test procedure and requires testing to be conducted with no other dispensing occurring. Districts using this procedure have typically interpreted this to mean that the facility must be closed down to conduct this test. In fact, it is possible to conduct the test when there is no dispensing of the affected product occurring; this can be done without closing down the facility. However, because the practice has been to require the facility to close down for this test, and because of the number of tests required by the certification procedure, this typically resulted in a loss of business to the facility as well as a considerable expenditure of inspector time. The largest hourly savings from the application of proposed TP-201.6C is due to reduction in the time to conduct the test.

For TP-201.4, staff believes that there are no differences in hourly requirements for compliance testing of existing GDF. This is based on the fact that the proposal for determining back pressure in Methodology 1 has not been modified from an earlier version of TP-201.4. The additional methodologies included in the proposal are identical to methodologies contained in TP-201.4 prior to May 2000. Under Methodology 6 testing time will be increased; however, as Methodology 6 will most likely only be used by districts at start up for the verification of correct vent riser piping configuration at a new GDF or a major modification to, or retrofit of, an existing GDF, the increase in testing time will be minimal.

B. Environmental Impacts of Proposed Amendments

1. Emissions Associated with Conducting TP-201.1B, TP-201.1C, TP-201.1D, and TP-201.6C

No emissions are expected when conducting proposed TP-201.1B Static Torque of Rotatable Phase I Adaptors. This test determines the static torque value and 360-degree rotation of the adaptors. Conducting this test does not require venting the

underground storage tank or dispensing of any fuel. Emissions from conducting TP-201.1C and TP-201.1D are expected to be negligible. These proposed test procedures do not require the venting of the underground storage tank ullage. The ROG concentration in the ullage is at the saturation level. Conducting this test would result in a small unquantifiable amount of emissions into the air.

Currently, TP-201.6 requires dispensing of 10 gallons of fuel and specifies a prewetting and wall adhesion step. Proposed TP-201.6C provides two options for conducting the test. Option 1 requires testing those nozzles where 25 milliliters or more is drained from the hose. Running option 1 would require dispensing only 7.5 gallons of fuel, would eliminate the pre-wetting and wall adhesion steps, and would be conducted only when more 25 milliliters or more are found. Based on data submitted by one district, option 1 identified 234 defective liquid removal system out of 343 tests. The current liquid removal test, TP-201.6, would have identified 241 defective systems out of 343. Since option 1 would be nearly as effective as TP-201.6 and would result in faster identification of defective liquid removal system, staff believes that it is reasonable to assume that this would result in faster repairs of defective liquid removal systems. A defective liquid removal device results in loss of control efficiency. Option 2 requires the testing of all hoses regardless of the volume of liquid drained from the hose as found. In addition to dispensing 7.5 gallons of fuel, option 2 requires a pre-wetting and wall adhesion step similar to the current liquid removal test, TP-201.6. Option 2, however, causes fewer test related emissions (when compared to the current TP-201.6) because the amount of fuel dispensed is reduced from 10 to 7.5 gallons and the number of test runs required per nozzle is reduced from three to one. In addition, staff believes that emissions associated with conducting TP-201.6C are more than offset by a program in which defective liquid removal systems are repaired more quickly.

2. Test Related Emissions Resulting From Proposed TP-201.4

With the aid of data from several districts, the percentage of Phase II Balance systems was estimated to be 40% statewide. This percentage was the basis we used to determine the amount of emissions associated with TP-201.4 for both Balance and Vacuum-Assist facilities. Other estimates used in our calculations, also obtained with the aid of local districts, are shown below.

- 11,500 gasoline dispensing facilities statewide (GDF)
- 40% balance GDF (4,600 facilities)
- 1,500 startup tests (40% balance, 60% Vacuum-Assist) annually
- 16.8 nozzles/GDF (balance facilities)

For Phase II Balance systems, TP-201.4 requires various methods of introducing nitrogen into a gasoline dispensing facility (GDF) at flow rates of 60 cubic feet per hour (CFH) and, in some instances 80 CFH. In each method, the Phase I vapor poppet on the underground storage tank is required to be open to atmosphere

which allows vapors to be released directly into the environment. Keeping the vapor poppet closed while testing will result in erroneous back pressure readings. Since districts required Methodology 1, 2, or 3 to be conducted annually, staff estimates based on the following calculations that about 1.8 tons of ROG are currently emitted annually.

EXAMPLE 1 - Impact of Methodology 1, 2 or 3

$$V = \left[\frac{[60 + 80](30)}{3600} \right] ((16.8)(4,600)) = 90,160 \text{ ft}^3 \text{ per year}$$

Where:

V = volume of emissions emitted during annual test, ft³ per year 60 = required nitrogen flow rates during the test, CFH per nozzle 80 = required nitrogen flow rates during the test, CFH per nozzle 30 = minimum time required for nitrogen feed, seconds 3,600 = conversion factor from seconds to hours, seconds per hour 16.8 = number of GDF tested per year

Using the average concentration of the volume emitted to atmosphere during testing, the mass emissions caused by conducting any of the various methods was calculated as follows:

EXAMPLE 2 - Mass Emissions Impact of Methodology 1, 2 or 3

$$M = \frac{(0.27)(56.13)(90,418)}{(386.9)(2000)} = 1.8 \text{ tons per year}$$

Where:

M	=	mass of non-methane organic compound (NMOC) emitted
		during the test, tons per year
0.27	=	average NMOC concentration
56.13	=	molecular weight of the span gas used during the test,
		lbs/lb-mole
90,160	=	volume emitted during the test, ft ³ per year
386.9	=	molar volume, ft ³ /lb-mole
2,000	=	conversion factor from pounds to tons

Example 2 was used to illustrate the mass emissions associated with Methodology 1, 2 or 3. This reflects the amount of test related emissions on a statewide basis using the estimated figures obtained from districts.

Methodology 4, 5, or 6 is used during start-up. Using the same methodology for determining mass emissions, emissions associated with Methodology 4, 5, or 6 are shown in Table VI-1. Compared to Methodology 1, 2, or 3, emissions associated with Methodology 4, 5, or 6 are small. Staff believes Methodology 4, 5, or 6 is used only one time per facility and not as part of a routine compliance inspection program. Therefore, only the estimated 1,500 annual start up tests were applied.

Table VI-1
Estimated Emissions from Running TP-201.4

TP-201.4 Test Methodology Number	Estimated NMOC Test Related Emissions Statewide (tons per year)
Methodology 1, 2 or 3	1.8
Methodology 4	0.10
Methodology 5	N/A
Methodology 6	0.04

VII. ALTERNATIVES CONSIDERED

We have considered as an alternative the option of not adopting the proposed vapor recovery procedures. Not adopting the proposed procedures would be detrimental for the following reasons:

- A. Without revision, the existing vapor recovery certification and test methods may continue to be used without the improvements, clarifications, corrections, and additional quality assurance provisions contained in the proposed revisions.
- B. Without streamlined compliance test procedures, districts will continue to use more costly and time-consuming test procedures.
- C. Without the new test procedures, some EVR performance standards or specifications cannot be enforced as required under state law.
- D. Recent certification of equipment under the EVR regulations has demonstrated the need for additional performance specifications and definitions. New test procedures are required to enforce new and existing performance standards or specifications.

VIII. REFERENCES

- 1. 1999 California Almanac of Emissions and Air Quality
- 2. Bay Area Air Quality Management Source Test Procedure ST-39, "Gasoline Dispensing Facilities Air to Liquid Volumetric Ratio," draft dated July 1998

APPENDIX 1

PROPOSED AMENDMENTS TO CALIFORNIA CODE OF REGULATIONS

Note: Strikeout indicates deleted text; underline indicates inserted text.

Amend Sections 94010 and 94011, Article 1, Subchapter 8, Chapter 1, Division 3, Title 17, California Code of Regulations to read:

§ 94010. Definitions.

The definitions of common terms and acronyms used in the certification and test procedures specified in Sections 94011, 94012, 94013, 94014, and 94015 are listed in D-200, "Definitions for Vapor Recovery Procedures", adopted April 12, 1996, as last amended February 1, 2001 (insert amendment date), which are incorporated herein by reference.

NOTE: Authority cited: Sections 39600, 39601, 39607, and 41954, Health and Safety Code. Reference: Sections 39515, 41954, 41959, 41960 and 41960.2, Health and Safety Code.

§ 94011. Certification of Vapor Recovery Systems of Dispensing Facilities.

The certification of gasoline vapor recovery systems at dispensing facilities (service stations) shall be accomplished in accordance with the Air Resources Board's CP-201, "Certification Procedure for Vapor Recovery Systems of Dispensing Facilities" which is herein incorporated by reference. (Adopted: December 9, 1975, as last amended June 1, 2001–(insert amendment date)).

The following test procedures (TP) cited in CP-201 are also incorporated by reference.

TP-201.1 – "Volumetric Efficiency for Phase I Systems" (Adopted: April 12, 1996, as last amended February 1, 2001)

TP-201.1A – "Emission Factor For Phase I Systems at Dispensing Facilities" (Adopted: April 12, 1996, as last amended February 1, 2001)

<u>TP-201.1B – "Static Torque of Rotatable Phase I Adaptors " (Adopted: (insert adoption date))</u>

<u>TP-201.1C – "Pressure Integrity of Drop Tube/Drain Valve Assembly " (Adopted: (insert adoption date))</u>

TP-201.1D – "Pressure Integrity of Drop Tube Overfill Protection Devices "

(Adopted: February 1, 2001, as last amended (insert amendment date))

TP-201.2 – "Efficiency and Emission Factor for Phase II Systems" (Adopted: April 12, 1996, as last amended February 1, 2001)

TP-201.2A – "Determination of Vehicle Matrix for Phase II Systems" (Adopted: April 12, 1996, as amended February 1, 2001)

TP-201.2B – "Pressure Integrity of Vapor Recovery Equipment" (Adopted: April 12, 1996, as last amended February 1, 2001)

TP-201.2C – "Spillage from Phase II Systems" (Adopted: April 12, 1996, as last amended February 1, 2001)

TP-201.2D – "Post-Fueling Drips from Nozzle Spouts" (Adopted: February 1, 2001)

TP-201.2E – "Gasoline Liquid Retention in Nozzles and Hoses" (Adopted: February 1, 2001)

TP-201.2F – "Pressure-Related Fugitive Emissions" (Adopted: February 1, 2001)

TP-201.2H – "Determination of Hazardous Air Pollutants from Vapor Recovery Processors" (Adopted: February 1, 2001)

TP-201.2O — "Pressure Integrity of Drop Tube Overfill Protection Devices " (Adopted: February 1, 2001)

TP-201.3 – "Determination of 2 Inch WC Static Pressure Performance of Vapor Recovery Systems of Dispensing Facilities" (Adopted: April 12, 1996, as last amended March 17, 1999)

TP-201.3A – "Determination of 5 Inch WC Static Pressure Performance of Vapor Recovery Systems of Dispensing Facilities" (Adopted: April 12, 1996)

TP-201.3B - "Determination of Static Pressure Performance of Vapor Recovery Systems of Dispensing Facilities with Above-Ground Storage Tanks" (Adopted: April 12, 1996)

TP-201.3C – "Determination of Vapor Piping Connections to Underground Gasoline Storage Tanks (Tie-Tank Test)" (Adopted: March 17, 1999)

TP-201.4 – "Determination of Dynamic <u>Back</u> Pressure <u>Performance of Vapor Recovery Systems of Dispensing Facilities</u>" (Adopted: April 12, 1996, as last amended <u>April 28, 2000 (insert amended date)</u>)

TP-201.5 – "Air to Liquid Volume Ratio" (Adopted: April 12, 1996, as last amended February 1, 2001)

TP-201.6 – "Determination of Liquid Removal of Phase II Vapor Recovery Systems of Dispensing Facilities" (Adopted: April 12, 1996, as last amended April 28, 2000)

<u>TP-201.6C – "Compliance Determination of Liquid Removal Rate" (Adopted: [insert date of adoption]</u>

NOTE: Authority cited: Sections 39600, 39601, 39607, and 41954, Health and Safety Code. Reference: Sections 39515, 41954, 41956.1, 41959, 41960 and 41960.2, Health and Safety Code.

Amend Sections 94153, 94155, and 94163 Article 2, Subchapter 8, Chapter 1, Division 3, Title 17, California Code of Regulations to read:

§ 94153. Test Method for Determining the Dynamic Pressure Performance of Phase II Vapor Recovery Systems of Dispensing Facilities.

The test method for determining the dynamic pressure performance of Phase II vapor recovery systems of dispensing facilities with above-ground storage tanks is set forth in the Air Resources Board's TP-201.4 "Determination of Dynamic Back Pressure Performance of Vapor Recovery Systems of Dispensing Facilities" which is incorporated herein by reference. (Adopted: April 12, 1996, as last amended April 28, 2000 [insert amendment date])

NOTE: Authority cited: Sections 39600, 39601, 39607 and 41954, Health and Safety Code. Reference: Sections 39515, 39516, 39605, 40001 and 41954, Health and Safety Code.

§ 94155 <u>Compliance</u> Test Method for Determining Liquid Blockage of Phase II Vapor Recovery Balance Systems at Dispensing Facilities

The <u>compliance</u> test method for determining the liquid blockage of <u>a</u> Phase II vapor recovery system is set forth in the Air Resources Board's TP-201.6<u>C</u>, "<u>Compliance</u> Determination of Liquid Removal <u>Rate</u> of Phase II Vapor Recovery Systems of Dispensing Facilities" which is incorporated herein by reference. (Adopted: April 12, 1996-[insert adoption date], as last amended April 28, 2000)

NOTE: Authority cited: Sections 39600, 39601, 39607 and 41954, Health and Safety Code. Reference: Sections 39515, 39516, 39605, 40001 and 41954, Health and Safety Code.

§ 94163. Test Method for Pressure Integrity of Drop Tube Overfill Protection Devices.

The test method for determining the pressure integrity of drop tube overfill protection devices is set forth in the Air Resources Board's TP-201.201D "Pressure Integrity of Drop Tube Overfill Protection Devices" which is incorporated herein by reference. (Adopted: February 1, 2001, as last amended [insert adoption date])

NOTE: Authority cited: Sections 39600, 39601, 39607 and 41954, Health and Safety Code. Reference: Sections 39515, 39516, 39605, 40001 and 41954, Health and Safety Code.

Adopt Sections 94164 and 94165, Article 2, Subchapter 8, Chapter 1, Division 3, Title 17, California Code of Regulations to read:

§ 94164. Test Method for Static Torque and Rotation of Rotatable Phase I Adaptors

The test method for determining the static torque and rotation of Phase I vapor and product adaptors is set forth in the Air Resources Board's TP-201.1B, "Static Torque of Rotatable Phase I Adaptors" which is incorporated herein by reference. (Adopted: [insert adoption date])

NOTE: Authority cited: Sections 39600, 39601, 39607 and 41954, Health and Safety Code. Reference: Sections 39515, 39516, 39605, 40001 and 41954, Health and Safety Code.

§ 94165. Test Method for Pressure Integrity of Drop Tube/Drain Valve Assembly

The test method for determining the pressure integrity of drop tube/drain valve assembly is set forth in the Air Resources Board's TP-201.1C, "Pressure Integrity of Drop Tube/Drain Valve Assembly" which is incorporated herein by reference. (Adopted: [insert adoption date])

NOTE: Authority cited: Sections 39600, 39601, 39607 and 41954, Health and Safety Code. Reference: Sections 39515, 39516, 39605, 40001 and 41954, Health and Safety Code.

Appendix 2

Proposed Amendments of Vapor Recovery System Certification and Test Procedures

Appendix 3

Vapor Recovery Health and Safety Code Statutes

H&S 41950 Vapor Recovery Systems for Stationary Gas Tanks

- 41950. (a) Except as provided in subdivisions (b) and (e), no person shall install or maintain any stationary gasoline tank with a capacity of 250 gallons or more which is not equipped for loading through a permanent submerged fill pipe, unless such tank is a pressure tank as described in Section 41951, or is equipped with a vapor recovery system as described in Section 41952 or with a floating roof as described in Section 41953, or unless such tank is equipped with other apparatus of equal efficiency which has been approved by the air pollution control officer in whose district the tank is located.
- (b) Subdivision (a) shall not apply to any stationary tanks installed prior to December 31, 1970.
- (c) For the purpose of this section, "gasoline" means any petroleum distillate having a Reid vapor pressure of four pounds or greater.
- (d) For the purpose of this section, "submerged fill pipe" means any fill pipe which has its discharge opening entirely submerged when the liquid level is six inches above the bottom of the tank. "Submerged fill pipe," when applied to a tank which is loaded from the side, means any fill pipe which has its discharge opening entirely submerged when the liquid level is 18 inches above the bottom of the tank.
- (e) Subdivision (a) shall not apply to any stationary tank which is used primarily for the fueling of implements of husbandry.

(Added by Stats. 1975, Ch. 957.)

H&S 41951 Definition of Pressure Tank

41951. A "pressure tank" is a tank which maintains working pressure sufficient at all times to prevent hydrocarbon vapor or gas loss to the atmosphere.

(Added by Stats. 1975, Ch. 957.)

H&S 41952 Definition of Vapor Recovery System

41952. A "vapor recovery system" consists of a vapor gathering system capable of collecting the hydrocarbon vapors and gases

discharged and a vapor disposal system capable of processing such hydrocarbon vapors and gases so as to prevent their emission into the atmosphere, with all tank gauging and sampling devices gastight except when gauging or sampling is taking place.

(Added by Stats. 1975, Ch. 957.)

H&S 41953 Definition of Floating Roof

41953. A "floating roof" consists of a pontoon-type or double-deck-type roof, resting on the surface of the liquid contents and equipped with a closure seal, or seals, to close the space between the roof edge and tank wall. The control equipment required by this section shall not be used if the gasoline or petroleum distillate has a vapor pressure of 11.0 pounds per square inch absolute or greater under actual storage conditions. All tank gauging and sampling devices shall be gastight except when gauging or sampling is taking place.

(Added by Stats. 1975, Ch. 957.)

H&S 41954 ARB Shall Certify Vapor Recovery Systems

- 41954. (a) The state board shall adopt procedures for determining the compliance of any system designed for the control of gasoline vapor emissions during gasoline marketing operations, including storage and transfer operations, with performance standards that are reasonable and necessary to achieve or maintain any applicable ambient air quality standard.
- (b) The state board shall, after a public hearing, adopt additional performance standards that are reasonable and necessary to ensure that systems for the control of gasoline vapors resulting from motor vehicle fueling operations do not cause excessive gasoline liquid spillage and excessive evaporative emissions from liquid retained in the dispensing nozzle or vapor return hose between refueling events, when used in a proper manner. To the maximum extent practicable, the additional performance standards shall allow flexibility in the design of gasoline vapor recovery systems and their components.
- (c) (1) The state board shall certify, in cooperation with the districts, only those gasoline vapor control systems that it determines will meet the following requirements, if properly installed and maintained:
- (A) The systems will meet the requirements of subdivision (a).

- (B) With respect to any system designed to control gasoline vapors during vehicle refueling, that system, based on an engineering evaluation of that system's component qualities, design, and test performance, can be expected, with a high degree of certainty, to comply with that system's certification conditions over the warranty period specified by the board.
- (C) With respect to any system designed to control gasoline vapors during vehicle refueling, that system shall be compatible with vehicles equipped with onboard refueling vapor recovery (ORVR) systems.
- (2) The state board shall enumerate the specifications used for issuing the certification. After a system has been certified, if circumstances beyond the control of the state board cause the system to no longer meet the required specifications or standards, the state board shall revoke or modify the certification.
- (d) The state board shall test, or contract for testing, gasoline vapor control systems for the purpose of determining whether those systems may be certified.
- (e) The state board shall charge a reasonable fee for certification, not to exceed its actual costs therefor. Payment of the fee shall be a condition of certification.
- (f) No person shall offer for sale, sell, or install any new or rebuilt gasoline vapor control system, or any component of the system, unless the system or component has been certified by the state board and is clearly identified by a permanent identification of the certified manufacturer or rebuilder.
- (g) (1) Except as authorized by other provisions of law and except as provided in this subdivision, no district may adopt, after July 1, 1995, stricter procedures or performance standards than those adopted by the state board pursuant to subdivision (a), and no district may enforce any of those stricter procedures or performance standards.
- (2) Any stricter procedures or performance standards shall not require the retrofitting, removal, or replacement of any existing system, which is installed and operating in compliance with applicable requirements, within four years from the effective date of those procedures or performance standards, except that existing requirements for retrofitting, removal, or replacement of nozzles with nozzles

containing vapor-check valves may be enforced commencing July 1, 1998.

- (3) Any stricter procedures or performance standards shall not be implemented until at least two systems meeting the stricter performance standards have been certified by the state board.
- (4) If the certification of a gasoline vapor control system, or a component thereof, is revoked or modified, no district shall require a currently installed system, or component thereof, to be removed for a period of four years from the date of revocation or modification.
- (h) No district shall require the use of test procedures for testing the performance of a gasoline vapor control system unless those test procedures have been adopted by the state board or have been determined by the state board to be equivalent to those adopted by the state board, except that test procedures used by a district prior to January 1, 1996, may continue to be used until January 1, 1998, without state board approval.
- (i) With respect to those vapor control systems subject to certification by the state board, there shall be no criminal or civil proceedings commenced or maintained for failure to comply with any statute, rule, or regulation requiring a specified vapor recovery efficiency if the vapor control equipment which has been installed to comply with applicable vapor recovery requirements meets both of the following requirements:
- (1) Has been certified by the state board at an efficiency or emission factor required by applicable statutes, rules, or regulations.
- (2) Is installed, operated, and maintained in accordance with the requirements set forth in the document certification and the instructions of the equipment manufacturer.

(Amended by Stats. 2000, Ch. 729, Sec. 14.)

References at the time of publication (see page iii):

Regulations:

17, CCR, sections 94006, 94010, 94011, 94012, 94013, 94014, 94015, 94148, 94149, 94150, 94151, 94152, 94153, 94154, 94155, 94156, 94157, 94158, 94159, 94160, 94163

H&S 41955 Certification Required by Other Agencies

41955. Prior to state board certification of a gasoline vapor control system pursuant to Section 41954, the manufacturer of the system shall submit the system to, or, if appropriate, the components of the system as requested by, the Division of Measurement Standards of the Department of Food and Agriculture and the State Fire Marshal for their certification.

(Added by Stats. 1976, Ch. 1030.)

H&S 41956 Other Agencies to Adopt Rules for Certification

41956. (a) As soon as possible after the effective date of this section, the State Fire Marshal and the Division of Measurement Standards, after consulting with the state board, shall adopt rules and regulations for the certification of gasoline vapor control systems and components thereof.

- (b) The State Fire Marshal shall be the only agency responsible for determining whether any component or system creates a fire hazard. The division shall be the only agency responsible for the measurement accuracy aspects, including gasoline recirculation of any component or system.
- (c) Within 120 days after the effective date of this subdivision, the Division of Measurement Standards, shall, after public hearing, adopt rules and regulations containing additional performance standards and standardized certification and compliance test procedures which are reasonable and necessary to prevent gasoline recirculation in systems for the control of gasoline vapors resulting from motor vehicle fueling operations.

(Amended by Stats. 1981, Ch. 902.)

H&S 41956.1 Revision of Standards for Vapor Recovery Systems

41956.1. (a) Whenever the state board, the Division of Measurement Standards of the Department of Food and Agriculture, or the State Fire Marshal revises performance or certification standards or revokes a certification, any systems or any system components certified under procedures in effect prior to the adoption of revised standards or the revocation of the certification and installed prior to the effective date of the revised standards or revocation may continue to be used in gasoline marketing operations for a period of four years after the

effective date of the revised standards or the revocation of the certification. However, all necessary repair or replacement parts or components shall be certified.

- (b) Notwithstanding subdivision (a), whenever the State Fire Marshal determines that a system or a system component creates a hazard to public health and welfare, the State Fire Marshal may prevent use of the particular system or component.
- (c) Notwithstanding subdivision (a), the Division of Measurement Standards may prohibit the use of any system or any system component if it determines on the basis of test procedures adopted pursuant to subdivision (c) of Section 41956, that use of the system or component will result in gasoline recirculation.

(Amended by Stats. 1996, Ch. 426, Sec. 2.)

References at the time of publication (see page iii):

Regulations: 17, CCR, section 94011

H&S 41957 Division of Industrial Safety Responsibilities

41957. The Division of Occupational Safety and Health of the Department of Industrial Relations is the only agency responsible for determining whether any gasoline vapor control system, or component thereof, creates a safety hazard other than a fire hazard.

If the division determines that a system, or component thereof, creates a safety hazard other than a fire hazard, that system or component may not be used until the division has certified that the system or component, as the case may be, does not create that hazard.

The division, in consultation with the state board, shall adopt the necessary rules and regulations for the certification if the certification is required.

(Amended by Stats. 1981, Ch. 714.)

H&S 41958 Rules Shall Allow for Flexibility in Design

41958. To the maximum extent practicable, the rules and regulations adopted pursuant to Sections 41956 and 41957 shall allow flexibility in the design of gasoline vapor control systems and their components. The

rules and regulations shall set forth the performance standards as to safety and measurement accuracy and the minimum procedures to be followed in testing the system or component for compliance with the performance standards.

The State Fire Marshal, the Division of Occupational Safety and Health, and the Division of Measurement Standards shall certify any system or component which complies with their adopted rules and regulations. Any one of the state agencies may certify a system or component on the basis of results of tests performed by any entity retained by the manufacturer of the system or component or by the state agency. The requirements for the certification of a system or component shall not require that it be tested, approved, or listed by any private entity, except that certification testing regarding recirculation of gasoline shall include testing by an independent testing laboratory.

(Amended by Stats. 1982, Ch. 466, Sec. 72.)

H&S 41959 Certification Testing

41959. Certification testing of gasoline vapor control systems and their components by the state board, the State Fire Marshal, the Division of Measurement Standards, and the Division of Occupational Safety and Health may be conducted simultaneously.

(Amended by Stats. 1981, Ch. 714.)

References at the time of publication (see page iii):

Regulations: 17, CCR, sections 94010, 94011, 94012, 94013

H&S 41960 Certification by State Agencies Sufficient

41960. (a) Certification of a gasoline vapor recovery system for safety and measurement accuracy by the State Fire Marshal and the Division of Measurement Standards and, if necessary, by the Division of Occupational Safety and Health shall permit its installation wherever required in the state, if the system is also certified by the state board.

(b) Except as otherwise provided in subdivision (g) of Section 41954, no local or regional authority shall prohibit the installation of a certified system without obtaining concurrence from the state agency responsible for the aspects of the system which the local or

regional authority disapproves.

(Amended by Stats. 1996, Ch. 426, Sec. 3.)

References at the time of publication (see page iii):

Regulations: 17, CCR, sections 94011, 94012, 94013

H&S 41960.1 Operation in Accordance with Standards

41960.1. (a) All vapor control systems for the control of gasoline vapors resulting from motor vehicle fueling operations shall be operated in accordance with the applicable standards established by the State Fire Marshal or the Division of Measurement Standards pursuant to Sections 41956 to 41958, inclusive.

- (b) When a sealer or any authorized employee of the Division of Measurement Standards determines, on the basis of applicable test procedures of the division, adopted after public hearing, that an individual system or component for the control of gasoline vapors resulting from motor vehicle fueling operations does not meet the applicable standards established by the Division of Measurement Standards, he or she shall take the appropriate action specified in Section 12506 of the Business and Professions Code.
- (c) When a deputy State Fire Marshal or any authorized employee of a fire district or local or regional firefighting agency determines that a component of a system for the control of gasoline vapors resulting from motor vehicle fueling operations does not meet the applicable standards established by the State Fire Marshal, he or she shall mark the component "out of order." No person shall use or permit the use of the component until the component has been repaired, replaced, or adjusted, as necessary, and either the component has been inspected by a representative of the agency employing the person originally marking the component, or the person using or permitting use of the component has been expressly authorized by the agency to use the component pending reinspection.

(Added by Stats. 1981, Ch. 902.)

H&S 41960.2 Maintenance of Installed Systems

41960.2. (a) All installed systems for the control of gasoline vapors resulting from motor vehicle fueling operations shall be

maintained in good working order in accordance with the manufacturer's specifications of the system certified pursuant to Section 41954.

- (b) Whenever a gasoline vapor recovery control system is repaired or rebuilt by someone other than the original manufacturer or its authorized representative, the person shall permanently affix a plate to the vapor recovery control system that identifies the repairer or rebuilder and specifies that only certified equipment was used. In addition, a rebuilder of a vapor control system shall remove any identification of the original manufacturer if the removal does not affect the continued safety or performance of the vapor control system.
- (c) (1) The executive officer of the state board shall identify and list equipment defects in systems for the control of gasoline vapors resulting from motor vehicle fueling operations that substantially impair the effectiveness of the systems in reducing air contaminants. The defects shall be identified and listed for each certified system and shall be specified in the applicable certification documents for each system.
- (2) On or before January 1, 2001, and at least once every three years thereafter, the list required to be prepared pursuant to paragraph (1) shall be reviewed by the executive officer at a public workshop to determine whether the list requires an update to reflect changes in equipment technology or performance.
- (3) Notwithstanding the timeframes for the executive officer's review of the list, as specified in paragraph (2), the executive officer may initiate a public review of the list upon a written request that demonstrates, to the satisfaction of the executive officer, the need for such a review. If the executive officer determines that an update is required, the update shall be completed no later than 12 months after the date of the determination.
- (d) When a district determines that a component contains a defect specified pursuant to subdivision (c), the district shall mark the component "Out of Order." No person shall use or permit the use of the component until the component has been repaired, replaced, or adjusted, as necessary, and the district has reinspected the component or has authorized use of the component pending reinspection.
- (e) Where a district determines that a component is not in good working order but does not contain a defect specified pursuant to subdivision (c), the district shall provide the operator with a notice

specifying the basis on which the component is not in good working order. If, within seven days, the operator provides the district with adequate evidence that the component is in good working order, the operator shall not be subject to liability under this division.

(Amended by Stats. 1999, Ch. 501, Sec. 1.)

References at the time of publication (see page iii):

Regulations: 17, CCR, sections 94006, 94010, 94011

H&S 41960.3 Telephone Number for Reporting Problems

41960.3. (a) Each district which requires the installation of systems for the control of gasoline vapors resulting from motor vehicle fueling operations shall establish a toll free telephone number for use by the public in reporting problems experienced with the systems. Districts within an air basin or adjacent air basin may enter into a cooperative program to implement this requirement. All complaints received by a district shall be recorded on a standardized form which shall be established by the state board, in consultation with districts, the State Fire Marshal, and the Division of Measurement Standards in the Department of Food and Agriculture. The operating instructions required by Section 41960.4 shall be posted at all service stations at which systems for the control of gasoline vapors resulting from motor vehicle fueling operations are installed and shall include a prominent display of the toll free telephone number for complaints in the district in which the station is located.

(b) Upon receipt of each complaint, the district shall diligently either investigate the complaint or refer the complaint for investigation by the state or local agency which properly has jurisdiction over the primary subject of the complaint. When the investigation has been completed, the investigating agency shall take such remedial action as is appropriate and shall advise the complainant of the findings and disposition of the investigation. A copy of the complaint and response to the complaint shall be forwarded to the state board.

(Amended by Stats. 1986, Ch. 194, Sec. 1.)

H&S 41960.4 Operating Instructions

41960.4. The operator of each service station utilizing a system

for the control of gasoline vapors resulting from motor vehicle fueling operations shall conspicuously post operating instructions for the system in the gasoline dispensing area. The instructions shall clearly describe how to fuel vehicles correctly with vapor recovery nozzles utilized at the station and shall include a warning that repeated attempts to continue dispensing, after the system having indicated that the vehicle fuel tank is full, may result in spillage or recirculation of gasoline.

(Added by Stats. 1981, Ch. 902.)

H&S 41960.5 Nozzle Size Requirements

41960.5. (a) No retailer, as defined in Section 20999 of the Business and Professions Code, shall allow the operation of any gasoline pump from which leaded gasoline is dispensed, or which is labeled as providing leaded gasoline, unless the pump is equipped with a nozzle spout meeting the required specifications for leaded gasoline nozzle spouts set forth in Title 40, Code of Federal Regulations, Section 80.22(f)(1).

(b) For the purpose of this section, "leaded gasoline" means gasoline which is produced with the use of any lead additive or which contains more than 0.05 gram of lead per gallon or more than 0.005 gram of phosphorus per gallon.

(Added by Stats. 1987, Ch. 592, Sec. 2.)

H&S 41960.6 Fuel Pump Nozzles

41960.6. (a) No retailer, as defined in subdivision (g) of Section 20999 of the Business and Professions Code, shall, on or after July 1, 1992, allow the operation of a pump, including any pump owned or operated by the state, or any county, city and county, or city, equipped with a nozzle from which gasoline or diesel fuel is dispensed, unless the nozzle is equipped with an operating hold open latch. Any hold open latch determined to be inoperative by the local fire marshal or district official shall be repaired or replaced by the retailer, within 48 hours after notification to the retailer of that determination, to avoid any applicable penalty or fine.

(b) For purposes of this section, a "hold open latch" means any device which is an integral part of the nozzle and is manufactured specifically for the purpose of dispensing fuel without requiring the consumer's physical contact with the nozzle.

- (c) Subdivision (a) does not apply to nozzles at facilities which are primarily in operation to refuel marine vessels or aircraft.
- (d) Nothing in this section shall affect the current authority of any local fire marshal to establish and maintain fire safety provisions for his or her jurisdiction.

(Added by Stats. 1991, Ch. 468, Sec. 2.)

H&S 41961 Fees for Certification

41961. The State Fire Marshal, the Division of Measurement Standards, and the Division of Occupational Safety and Health may charge a reasonable fee for certification of a gasoline vapor control system or a component thereof, not to exceed their respective estimated costs therefor. Payment of the fee may be made a condition of certification. All money collected by the State Fire Marshal pursuant to this section shall be deposited in the State Fire Marshal Licensing and Certification Fund established pursuant to Section 13137, and shall be available to the State Fire Marshal upon appropriation by the Legislature to carry out the purposes of this article.

(Amended by Stats. 1992, Ch. 306, Sec. 5. Effective January 1, 1993. Operative July 1, 1993, by Sec. 6 of Ch. 306.)

H&S 41962 Vapor Recovery Systems on Cargo Tank Vehicles

- 41962. (a) Notwithstanding Section 34002 of the Vehicle Code, the state board shall adopt test procedures to determine the compliance of vapor recovery systems of cargo tanks on tank vehicles used to transport gasoline with vapor emission standards which are reasonable and necessary to achieve or maintain any applicable ambient air quality standard. The performance standards and test procedures adopted by the state board shall be consistent with the regulations adopted by the Commissioner of the California Highway Patrol and the State Fire Marshal pursuant to Division 14.7 (commencing with Section 34001) of the Vehicle Code.
- (b) The state board may test, or contract for testing, the vapor recovery system of any cargo tank of any tank vehicle used to transport gasoline. The state board shall certify the cargo tank vapor recovery system upon its determination that the system, if properly installed and maintained, will meet the requirements of subdivision (a). The

state board shall enumerate the specifications used for issuing such certification. After a cargo tank vapor recovery system has been certified, if circumstances beyond control of the state board cause the system to no longer meet the required specifications, the certification may be revoked or modified.

- (c) Upon verification of certification pursuant to subdivision (b), which shall be done annually, the state board shall send a verified copy of the certification to the registered owner of the tank vehicle, which copy shall be retained in the tank vehicle as evidence of certification of its vapor recovery system. For each system certified, the state board shall issue a nontransferable and nonremovable decal to be placed on the cargo tank where the decal can be readily seen.
- (d) With respect to any tank vehicle operated within a district, the state board, upon request of the district, shall send to the district, free of charge, a certified copy of the certification and test results of any cargo tank vapor recovery system on the tank vehicle.
- (e) The state board may contract with the Department of the California Highway Patrol to carry out the responsibilities imposed by subdivisions (b), (c), and (d).
- (f) The state board shall charge a reasonable fee for certification, not to exceed its estimated costs therefor. Payment of the fee shall be a condition of certification. The fees may be collected by the Department of the California Highway Patrol and deposited in the Motor Vehicle Account in the State Transportation Fund. The Department of the California Highway Patrol shall transfer to the Air Pollution Control Fund the amount of those fees necessary to reimburse the state board for the costs of administering the certification program.
- (g) No person shall operate, or allow the operation of, a tank vehicle transporting gasoline and required to have a vapor recovery system, unless the system thereon has been certified by the state board and is installed and maintained in compliance with the state board's requirements for certification. Tank vehicles used exclusively to service gasoline storage tanks which are not required to have gasoline vapor controls are exempt from the certification requirement.
- (h) Performance standards of any district for cargo tank vapor recovery systems on tank vehicles used to transport gasoline shall be

identical with those adopted by the state board therefor and no district shall adopt test procedures for, or require certification of, cargo tank vapor recovery systems. No district may impose any fees on, or require any permit of, tank vehicles with vapor recovery systems. However, nothing in this section shall be construed to prohibit a district from inspecting and testing cargo tank vapor recovery systems on tank vehicles for the purposes of enforcing this section or any rule and regulation adopted thereunder that are applicable to such systems and to the loading and unloading of cargo tanks on tank vehicles.

(i) The Legislature hereby declares that the purposes of this section regarding cargo tank vapor recovery systems on tank vehicles are (1) to remove from the districts the authority to certify, except as specified in subdivision (b), such systems and to charge fees therefor, and (2) to grant such authority to the state board, which shall have the primary responsibility to assure that such systems are operated in compliance with its standards and procedures adopted pursuant to subdivision (a).

(Amended by Stats. 1982, Ch. 1255, Sec. 2. Operative July 1, 1983, or earlier, by Sec. 27.5 of Ch. 1255.)

References at the time of publication (see page iii):

Regulations: 17, CCR, sections 94014, 94015